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*Let's Talk About*

# IRIS

SUPPLEMENT TO CATALOG OF

COOLEY'S GARDENS  
SILVERTON, OREGON

## “LET’S TALK ABOUT IRIS”

Fifteen years ago I purchased my first iris plants, ten months later enjoyed the first thrill of viewing their blooming in my own garden, and a few weeks after that experienced my first great adventure in dividing and transplanting some of the clumps. And of what great significance, you may query, can that be? Simply this: I had been launched upon a hobby that was to change my ideas of recreation, that was to occupy most of my spare time, considerable of my spare change, and eventually establish me in the iris business and lead me to all parts of the United States and Canada in the quest of the very newest and latest developments in this strangely fascinating flower.

During these fifteen years I have tried to learn all there is to know about iris—tried, I repeat. No attempt is made to convince anyone that I have been successful, but even though a rolling stone may gather little or no moss it at least covers a lot of territory and if it could talk might be able to tell an interesting story. Such is the purpose of this little booklet.

The average catalog as issued by major iris specialists does a pretty complete job of telling the public about iris varieties and species. Descriptions are quite adequate, and from these specialists the casual gardener or novelty collector can glean sufficient information as to color, height, growing habit and price. But such catalogs are, on the whole, expensive—glossy enamel paper, expensive halftone cuts, still more costly color engravings, and heavy postage on the finished book. To go into lengthy detail on the many phases of iris growing and to discuss informally the myriad attractions of this hobby would be more than any grower’s catalog could profitably carry. And so we have devised this supplement, and we hope you will enjoy its contents.

## LEAVE IT TO THE IRIS

LOUISE BLAKE, Three Oaks, Spartanburg, S. C.

Miss Grace Sturtevant was amused when I told her that for fifteen years I had marveled at the ease and sureness with which she named her iris. She answered with her radiant smile, "It is much easier to originate an iris than to name it." As I start this paper, at the order of our secretary, on garden pictures of tall bearded iris, I realize how much easier it is to plan and to plant than to describe the garden effect.

In the first place, I must confess that I leave it to the iris. In planning colors I neither study a book nor work with a color chart. I look at an iris and the iris tells me what to do. There are many people who have never really looked at an iris in their lives. It's an exciting thing to do. I look at an iris that is called pink and I find pink and blue and yellow and warm white. What is the use of going to a book or a color chart when the iris has told me the colors to use in my garden picture?

One other confession: I have not reached the height of iris culture where I shun *amoenas*, disdain *plicatas*, tolerate blends, dislike *bicolors* and scorn *variegatas*. I have liked *amoenas* ever since, many years ago, I bought Mildred Presby from Bertrand H. Farr. And I have noticed in my garden that visitors rarely pass Dorothy Dietz without a smile of appreciation and they always pause with a gasp of delight before Marquita and Shah Jehan. Los Angeles was my first modern *plicata* and age does not wither the luminous quality of this iris. Every spring I recapture the thrill of pleasure the first blooming gave me. At the annual meeting when we were being graciously entertained by Mrs. J. Edgar Hires, I ran out in the rain and darkness three times to look at the lovely, as well as wonderful, Siegfried. During supper, a suave voice whispered, "No use getting excited over a *plicata*." Well, I'm still excited over Siegfried! As for blends, with their coloring of charm and mystery, I can not even understand a lack of enthusiasm so I leave it to Serenite and Mary Geddes to plead the case. How can any gardener fail to appreciate the value and the beauty of *bicolors*? I leave it to Sir Michael and At Dawning. And as for *variegatas*, I am thankful I have not missed the interest and delight of Deseret, El Tovar, Picador, Vision, and a score of others in my garden.

When we place a picture on the walls of our home, we carefully consider light and shadow but we are apt to place a garden picture anywhere we find a space. This is hard on iris, particularly hard on blends. I have two garden pictures where blends predominate; one, in partial shade, the other in full sunlight.

It is interesting how many tall bearded iris like partial shade. I look at an iris blooming in the hot sunlight and hear it begging for shade! The season Jean Cayeux came down in price to fit the purse of a doctor's wife, I bought a rhizome. The same season, a friend sent me Jean as a gift. One, I planted in partial shade, the other in full sunlight. Jean of the shadows is a larger clump, has more blooms, lovelier coloring and far greater lasting power. Among the iris in this planting in partial shade are Copper Lustre, Summer Tan, Brown Betty, K. V. Ayres, Lux, Evolution, Far West, and Setting Sun. Here I am cherishing a wonderful blend of Mr. Thurlow Weed which will be named and registered next year. This Zeta blend grows stiff and straight on a 44-inch stalk and has an intriguing coloring of grey brown on a bronze gold ground. The falls, semi-flaring, are lightly washed violet blue. These iris are fastidious and do not like dull or gloomy neighbors. They are happy with light blues, and, by the way, Chancellor Kirkland likes to use Summer Cloud with Copper Lustre. They are also happy with pink blends like Tokay, Boadicea, and buff pink President Pilkington, and these are used in the picture which is framed at both ends by drifts of Euphony. I plan as my stock increases to paint this picture in two colors: tan and warm cream, for nearby is a brilliant splash of hemerocallis. The garden picture in full sunlight where blends predominate is made up of Mary Geddes, Golden Light, Crown Jewel, Golden Flare, Clara Noyes, Midgard, Rameses and Talisman. These deepen into the medium pink and rose of Coralie, then into the deep rose of Evelyn Benson toning into Golden Hemlet and Dr. Kleinsorge's new blood red iris Rebellion, the standards suffused with bronze and rose. This planting has an irregular border of rose clove pinks, citron yellow, citrinum and bronze gold pansies.

After all, color sense is an individual thing and each one of us looks at an iris with different eyes. Mrs. L. W. Kellogg looks at a sparkling iris and sees copper; I look at the same iris and find it aglow with light shining through stained glass. I see ruby, violet and Etruscan gold. Naturally, we would use a different setting for Copper Piece.

I have a trail of copper Indians that makes a stunning garden picture. The trail starts with Timagami, Aztec, Ojibway, Magnetawan, Yucatan, and Junaluska. I wonder at the criticism that these look too much alike, for each one is distinctive and rarely beautiful. Following on this Indian trail are Ware Eagle, Burning Bronze, Zuni, Indian Chief, and at last, Trail's End. I am experimenting in this group with Dr. Grant's lustrous purple Indian Hills because a nearby drift of purple baptisia adds amazingly to the picture.

On a southern terrace, over the heads of the Indians, are drifts of blue and of white iris. This planting was suggested by the iris themselves. A few years ago I bought three of Prof. Essig's iris: Easter Morn, Sierra Blue, and, my favorite of the Essig blues, Shining Waters. When they bloomed, the iris told me what to do with this terrace. Now, I have a drift made up of nine white iris followed by a drift made up of nine blue iris from light to medium. There are six white, and five blue drifts on the terrace, every one different but the same iris are repeatedly used. The best whites in this picture are Purissima, and in this Piedmont section of South Carolina Purissima has thrived for years, Easter Morn, Venus di Milo, Crystal Beauty, Joyance, Shasta, Columbine, Wambliska and Gudrun. The most outstanding white iris on the terrace last spring was Gudrun. The best blues are Shining Waters, Sierra Blue, Pale Moonlight, Pacific, Blue Monarch, El Capitan, Paulette, Missouri and Gloriole which surpassed all other blues in utter beauty. This terrace has a background of the single pink Japanese peony, Okino Nami.

On a higher level is a drift of gold. This is a new development which was to have twenty-five yellow iris but my enthusiasm carried it to fifty. There is nothing subtle about the color scheme but it's soul uplifting for all that! The ends of my drift start with cream yellow: Kalinga, Sunmist and Sweet Alibi at one end; at the other, Yellow Pearl, Dore and William Cary Jones. The last, a beautiful and little known iris by Brehm, was given me to try out in my garden and it is a beauty I would not be without. It grows on a strong stalk, a larger flower of good form, fine substance and beautiful color of ivory yellow. In my drift of gold, cream yellows run into soft yellows of Alice Harding, Desert Gold, Gold Standard, Helios, Phebus Cayeux, Pluie d'Or, then into deeper yellows of Chromylla, Eilah, Eclador, Gold Spangle, Lady Paramount, Lucre, Robert, Jasmania, W. R. Dykes, Padishah, Marvelous, Alta California, then into real gold of Coronation, Crysoro, Happy Days, Golden Bear, Berkeley Nugget, Treasure Island, Lucrezia Bori, California Gold and Naranja. Most of these rhizomes were taken from clumps in my own garden, three are 1937 introductions and I have not seen their blooms: Chancellor Kirkland's Padishah and Marvelous and Dr. Kleinsorge's Treasure Island, a few others that I have liked in other gardens will bloom for me the first time next spring. Lucrezia Bori is one of these, a beautiful and exciting iris. Everyone went mad over it in Nashville and Chattanooga, and the pendulum of popularity swung too far, now it swings back with a note of criticism. The Dykes influence was visible then, visible too was the slight olive reflex on the falls. Lucrezia Bori is a thrilling iris. In my drift of gold, I

have used some varieties twice to produce a required shade of color tone. I have made blunders but I leave it to the iris. They will tell me when they bloom where changes must be made. In the lawn surrounding this drift sparkle myriads of Johnny-jump-ups. No keeping Johnnys from jumping in my garden!

In front of the house I have a rainbow picture in which I use sixty clumps, each a different variety, of tall, modern iris. These are planted eighteen inches apart and I have worked to make neighbors congenial for this is really more important to an iris than to a human being. In this bed of strong vivid coloring, yellows are of the greatest use. Last year Valor and Lady Paramount stole the show.

In partial shade is a smaller picture made up of pink and of blue iris. Through the center from top to bottom is an irregular planting of blue composed of Sierra Blue, Shining Waters, Pale Moonlight, El Capitan, Gloriole, Blue Triumph, Blue Monarch deepening to Blue Dusk. On each side is a pink drift. On the left are Pink Satin, Pink Opal, Airy Dream, China Rose, At Dawning and the beautiful Morocco Rose of Dr. Loomis, a 1937 introduction of Mrs. Pattison who has revealed so much beauty to iris lovers. On the right are Imperial Blush, Thais, Ethelwyn Dubuar, Eros, Sandia and Frances Chreitzberg. This is an iris by a Spartanburg amateur whose work with iris has the love, skill and infinite patience of the expert. His iris, Frances Chreitzberg, is a large, slightly ruffled flower of fresh, sparkling medium pink. Form, texture, substance, and garden value are good. The medium stalk is strong and branching. On each side of this garden picture is a frame of Noweta with columbines in pink and blue shades.

Red iris are a joy to me—and a problem. Every gardener knows that dark colored iris have to be prayed over if managed successfully, but I have no trouble with the beautiful dark blues, violets and purples for they are carefully planted with other colors where, with a little help at times from the yellows, they harmonize and make themselves perfectly at home. But reds! They grow on a bank facing the rising sun, a home they like for they flourish and multiply. The upper part of the bank, sloping down from the rose garden, is covered with creeping roses. The red iris are far enough away to escape all entangling alliances but near enough for perfect drainage and for a perfect background. First I planted with my reds some stunning variegatas toning in with yellow selfs. I could hardly wait for May! What happened? My reds shrank into the shadows and had nothing to do with the gay picture. In another part of my garden I had a modern dashing drift of red and of white tulips:



Gloria Swanson and White Giant. These tulips solved the problem! All the variegatas and yellows went to other beds. instead, white iris were planted with my red. When I'd wake up winter nights I could see that picture! Spring came and the iris bloomed. What happened? Well, I felt uncomfortable, so did the red iris. They looked as if their slips were showing, and as if they knew it! Then I added medium blues and the picture went patriotic on me with poor coloring at that. In desperation I added medium pinks. Next July I plan to do what the iris have told me: leave the picture to red iris. I hope to have large enough clumps to be able to pull apart and combine carefully and gradually the varying shades and tones, avoiding sharp contrasts, making graduations very slowly, using three of one variety before going into the next. I leave it to the iris. They will show me the way. The iris fan who doesn't bother about iris pictures misses a lot of trouble—and a lot of joy.

It is against the rules to plant tall bearded iris in the rock garden but there comes a time in late spring when the interesting Alpines lose interest and the wake robins go to sleep. Then, if you have planted a drift of dazzling Neon that laughs aloud, or of Jerry, the one red that stands up and cheers, the rock garden will be jerked back to a veritable flame of life. And how the iris like to scramble between those rocks! They are like children on a picnic.

After all, the old fashioned way of planting an iris is the best—bordering a path. Look at an iris and it tells you it likes to march, swords and banners flashing. For many years iris have marched along my path from the drive to the woods, a distance of 275 feet. It would be no fun merely planting a row of iris on each side of a path, if I did not find out from the iris themselves the comrades who like to march together. Beyond the iris, on both sides, are tulips and they have undergone a development as great as the iris and have been replaced as often. Now my tulips are Modern Dutch Breeders and New Ideal Darwins and I have found that by planting a month later than I should, they bloom with my iris. One of my pictures is a combination of El Capitan, San Diego and Ningal with a drift of the New Ideal Darwin tulip, Golden Goblet, and a planting of *anchusa myosotidiflora*. The combination following Ningal is Tuscany Gold, Honeydrop and Rose Dominion with a drift of the Modern Dutch Breeder tulip, Indian Chief, which is not unlike in color the iris of the same name, and a planting of Siberian wallflower.

As I confessed in the beginning, when making pictures of tall bearded iris, instead of studying a book, I study an iris. It is

my belief that the real gardener is too busy wielding a hoe in the garden to find time for wielding a pen in the study. So I leave it to the iris!

—From Bulletin of the American Iris Society, October, 1937.

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## CULTURE OF BEARDED IRIS

From the book "*Iris*" by F. F. ROCKWELL, published by the Macmillan Company, New York. We sincerely recommend this book, reasonable in price, right to the point.

The amateur gardener interested in irises will have seen it stated again and again that they are among the easiest of all plants to grow. Even some books on the subject dismiss their culture with but a paragraph or two.

It is true that irises are exceptionally easy to grow if—but the "if" covers several points of such vital importance that it is as easy to fail with irises if these requirements are not met as it is easy to succeed with them when they are.

Moreover, it is one thing merely to get irises to grow, but quite another to get them to thrive so vigorously that they will give freely and fully the marvelous beauty which over a long period should be their contribution to the garden. Anyone who plans to grow even a few irises should not be content to achieve merely indifferent results, especially as real success is to be had with little or no more labor by providing conditions which will keep the plants really happy.

### Soils and Fertilizers

Most irises will succeed well in any type of soil from almost pure sand to stiff clay. I have grown the bearded and beardless types in these two extremes and in every soil between them. I have seen them growing in very light sandy loam and in really heavy soil, both in the same garden. I have grown some species of the bulbous iris in light sandy soil, as well as in fairly heavy loam.

Where one may choose, a medium heavy, fairly well-enriched soil—in other words, ordinary good garden soil—is to be preferred. The advantage of a heavy soil is that it will maintain the food supply necessary for continuous good bloom season after season better than a really light soil. Its disadvantage is that it may incline to be too wet, especially in a rainy season. Light sandy soil, on the other hand, has the advantage of thorough drainage, but the disadvantage of quickly dissipating the food supply. A well-drained porous medium loam well sup-

plied with humus combines the advantages and eliminates the disadvantages of both the preceding types.

For growing irises, therefore, a heavy soil may be greatly improved by the addition of sand, sifted coal ashes, wood ashes, gypsum (sometimes called "land plaster") or pulverized limestone. The latter material I prefer to hydrated lime for this purpose. It is slower acting but less caustic and has a better effect on the mechanical condition of the soil. Also, for very heavy soils larger quantities of it may be used without getting an excess of lime—application of 15 to 20 pounds to the hundred square feet being perfectly safe, for beardless irises particularly. Japanese irises using aluminum sulphate instead of lime especially if the soil has been previously limed.

For light sandy soils inclined to be too porous or open, gypsum or limestone is effective in improving the mechanical condition. Manure, often recommended for improving light sandy soil, should not be used unless it is so old and decayed as to have become practically black soil. Many soils are benefited by the addition of peat moss which helps retain both soil moisture and plant food. For the bearded irises mix one-half to one pound of lime to each cubic yard of peat moss.

### **Sub-Drainage**

Indifferent though most irises are to the character of the soil in which they grow, when it comes to drainage they are among the most particular of plants. . . . Bearded irises simply must have good drainage to survive, and even the beardless irises which may relish an abundance of moisture during most of the growing season will do well only where the surface soil is thoroughly drained, and will actually perish where it is wet up to and around the root stalks.

If the soil is naturally heavy or poorly drained it may be necessary to excavate 12 to 18 inches where the bed is to be planted, filling in with 6 inches or so of cinders, gravel, or other drainage material. This, however, will be required only in extreme cases.

### **Fertilizer**

Sheep manure, tankage, and many other fertilizers good for most garden flowers are rather too rich in nitrogen for irises. They result in a lush but soft growth of the foliage and poorer rather than better bloom. They may be employed temporarily as a mild stimulus as the buds are forming but should not be used to any extent throughout the season. I have used with great success in preparing the ground for irises both bone meal (both coarse and fine, mixing half and half) and a generous

quantity of wood ashes; either of these supplies a little but sufficient nitrogen and plenty of phosphoric acid and potash in such form as to become gradually available through two or three years, by the end of which time the clumps usually need re-planting. Three or four quarts of bone meal mixture is sufficient for a bed 5 feet wide by 20 feet long. The wood ashes may be put in to a depth of one-half inch or so. Both should be thoroughly forked into the soil before planting. Other fertilizers of various kinds are frequently advocated by iris growers, but I have never found anything else necessary in preparing the soil.

### **Lime and Aluminum Sulphate**

Lime which makes acid soil "sweet" and aluminum sulphate which makes sweet soil "acid" are not fertilizers, but may be used to correct either extreme soil condition. Iris literature frequently refers to the necessity of providing plenty of lime for the bearded irises and an acid soil for the beardless sorts. I think the case might be more correctly stated by saying that the bearded irises will not do well in an extremely acid soil, nor the Japanese and other beardless varieties in a soil containing a great deal of lime. It has been my experience that both will grow satisfactorily in average "neutral" garden soil that is neither one extreme nor the other. I have grown them side by side many times with no special preparation for either; and I have seen both types so growing in scores of gardens where no attention had been given to sweetness or acidity of the soil.

Soil may be readily tested for acidity by any gardener with the aid of a Soiltex outfit which costs but \$1.00.

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## **PLANTING AND TRANSPLANTING**

Whether you are ordering new iris from some dealer or simply dividing your old clumps and making over a former planting, the first matter of prime importance is to have the ground in proper condition. Although an iris rhizome may be discarded and tossed carelessly over the fence, only to defy your efforts by taking root and even blooming in such haphazard position, if one expects good results the soil should be diligently worked up to a good depth. It should be thoroughly pulverized underneath as well as on the surface, and if necessary, humus or sand added, depending on the nature of the soil itself. When your rhizomes arrive you will then be all set to plant them immediately.

Don't plant bearded iris in a deeply shaded situation. They love the sun, and while they will grow well enough in heavy shade they will not bloom well. The roots of trees and large

shrubs rob the soil of moisture and plant food, and so this must also be taken into account when deciding where the iris are to go. Light shade is a satisfactory and sometimes an advantageous adjunct, providing the soil is not sapped by tree roots.

**When to Plant.** This is a question oftentimes asked and but little understood by amateurs. Actually, iris may be transplanted almost any time, even when in bloom, but such lack of regard for the intentions of nature often ends in disappointing results. After the flowering season, in June and July, the new offsets or rhizomes are fairly well developed and if removed and planted at that time or during the next few months will generally bloom the following spring. The rhizomes are in a semi-dormant state during these months, and when detached and replanted in moist soil will immediately put out new rootlets and commence to grow.

In sections of the country where the climate is very arid and no means of providing moisture are readily at hand, planting should be deferred until late summer or early fall rains are in the offing. Once established the iris can withstand drouth much better than almost any other perennial.

Where the winters come fairly early, or where temperatures drop into the low freezing bracket, it is of prime importance that iris planting be done early enough so that the new plant has an opportunity to put out root growth and become anchored against the possibility of heaving out of the ground. In such climates a mulch of coarse material such as corn stalks, salt hay, and so on, should be applied shortly after the ground freezes, and removed as soon as the plants show signs of spring growth.

Spring planting is practical, but seldom done by commercial growers, and generally unsatisfactory results in the way of bloom the first season may be expected. It means that the rootlets must be torn about more or less, at a time when the plant itself is full of sap and green growth. While they will live and usually give a half-hearted attempt at blooming, it is not a good practice and should be done only when conditions make it necessary.

**How to Plant.** Somebody once said that an iris should be planted like a duck on the water. He should have to pay a fine equal to the value of all the iris that have been lost as a result of this practice! Where a clump is allowed to develop naturally over a period of years, the rhizomes do pile up on the surface, but they are fastened to old mother earth by tough roots and hang on for dear life. When setting a new rhizome, spread out the small roots well down in the ground, firm the soil about

them, and have the rhizome or bulb-like portion of the plant just below the soil level. We usually cover it from a half-inch to an inch, the latter depth when planting late in the season.

If the plants are to be left in the same position for several seasons, they may be planted a distance of two feet apart. After the first year the planting will no longer appear sparse, and even at three feet the space will rapidly fill up. If an immediate effect is desired, the rhizomes may be set in groups of three or four of a kind, spaced eight or ten inches each way. These groups should then be separated by from two to four feet. If you are buying a collection of different varieties, one plant each, it would be well to give each sort plenty of room and not too close to neighboring varieties unless the colors harmonize. Where space is limited and one wants a wide variety of color, they may be planted a foot apart in a straight or staggered row.

If the ground is dry at planting time, pour enough water into the hole to settle the dirt about the roots. See that the surface does not cake after it dries off, and then keep the plants well cultivated, lightly, but to retain the moisture. Watering should not be done unless the ground appears to be getting quite dry, as too much moisture will sometimes cause rot and in some instances will promote excessive growth before winter and result in the bloom center being killed off by spring frosts. This is an explanation of some newly set iris failing to bloom the first spring, but growing well enough otherwise.

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## INSECTS AND DISEASES

This article on iris pests is a short but not a sweet one. The iris, as garden flowers go these days, is fairly free from insects and diseases, but the ones that do appear are exasperatingly annoying, and are not infrequently fatal to individual plants. Notwithstanding this, it may be said in fairness that iris troubles are both less likely to appear, and may be more definitely controlled, than those attacking many another garden favorite, such as the rose, delphinium, or even the old-time hollyhock. They are at least definite, discernible, and get-at-able, and not of the insidious type which attacks the constitution of the entire plant, leaving the gardener with an outlook about as hopeful as that of a cancer patient.

### Iris Borer

Unquestionably the most dreaded trouble of the iris lover is the iris borer, who is just as mean if you meet him under his impressive scientific title of *macronoctua onusta* Grote.

The iris borer is a cousin of our old friend, the cutworm. They are, however, alike only in general appearance and in being among the meanest of all garden visitors. Even the moth which mothers this despicable gangster seems to be ashamed of her part in his life, flying by night, and by day hiding her drab form among garden trash, or in sheltered corners. So far as her life history seems to be known at the present time, she emerges from the soil beneath the iris roots, where the mature borers have pupated, from mid-September to October, and lays her pale yellow, flattish eggs, about one-fiftieth inch in diameter, in clusters in the folds of the leaves at the base of the plant, apparently preferring the dried outer leaves to the growing ones. The eggs remain here during the winter and hatch in April or May, or even as late as June, according to the season—somewhat earlier in the southern states and later in the more northern ones.

As soon as the tiny caterpillars hatch, they crawl or eat their way into the sheath or fan, producing the characteristic frayed effect of the leaf edges as the latter, later on, grow out of the sheaf. Later, they work into the leaves, mining inside of them, where they continue to work for five weeks to two months, gradually increasing in size. During this period the location of the borer is indicated by a dark, water-soaked area in the leaf's surface. Later, at about flowering time or soon after, for later-flowering varieties, he burrows into the rootstock or rhizome, often destroying a growing eye or bud as he goes, and then proceeds to eat out a good part of the center of the root. When he leaves the root to enter the soil beneath it to pupate in a tender-skinned, small, chestnut brown chrysalis, he leaves behind him a cavity, often a mere shell. Some authorities claim that the "bored" roots provide ideal conditions for the development of the root-rot disease; others believe there is no connection between the two; personally, I have never found any convincing evidence of the former theory.

**Control.** While there has not yet been developed any quick, sure method of complete control, the ravages of the borer may be satisfactorily checked in most home gardens by taking the following steps. The first conspicuous sign of danger is likely to be the knicked leaf edges. Examine carefully to detect small borers within the foliage, as indicated by the green puncture spots; the tips of individual leaves may be cut off and burned. Afterward, watch carefully for any signs of a borer lower down. As they become larger, their presence in the foliage is more readily detected. When small, they may be crushed by squeezing the leaf between thumb and finger; when larger, they may be killed with a wire. Little or no damage is done to the plants by the eating of the leaves.

After flowering, if plants are being transplanted, any borers in the roots will almost certainly be seen if the roots are shaken out or washed off and examined. Sawdust-like exudations from the hole where the borer entered are easily seen; he may either be cut out, or killed where he is with a stiff wire. I think the former method preferable, as the roots may then be cleaned, freed from the mass of moist product, and treated with permanganate solution (described under root rot), and safely planted. A thorough forking over of the soil when replanting is done later, is likely to destroy any pupae.

A new method for control, which I have never tried, but which is said to give 90 per cent or better results, is to spray the young foliage, **early** in the spring, with a mixture of arsenate of lead, 1 ounce; fish-oil soap, 1 ounce; water, 1 gallon. The soap acts as a spreader or sticker, but probably casein or kayso would do as well for this purpose. The spray should be repeated at intervals of a week or ten days, three or four times, to keep the new growth covered thoroughly so the small worms will be sure to get it when they first hatch out. Of course, it is ineffective once they have burrowed within the leaves.

Plants in the open garden, free to wind and sun, are not so likely to be bothered by the borer as they are in closed places, near walls or hedges, or growing with other plants in a border. I have never known of any serious injury from the borer in a commercial planting in an open field, but have heard occasional damages reported.

### Cutworm

This universal pest does not bother plants in the garden or border, as they are somewhat too stout for him, but he may do serious damage among the seedlings. The regular poison bran mash, used to get cutworms in the vegetable garden, may be applied here. There are several ready-prepared cutworm foods on the market, or the poison mash may be made easily at home. The formula recommended by the Department of Agriculture is as follows: One-quarter pound white arsenic to a peck of bran or "shorts".

These are mixed together dry. To this dry mixture is added, a little at a time, a gallon or so of water, in which a pint of cheap molasses has been thoroughly stirred. After standing for a few hours, this will be ready to apply by scattering in small "gobs", so that it will not dry out too quickly, over the soil surface just before dusk, as the cutworms feed at night. Arsenate of lead or Paris green may be used in place of the white arsenic if more convenient.



## Iris Root Rot

Of the few diseases attacking the iris, the root rot (*Pseudomonas iridis* or *Bacillus omniverus*) is the worst. This is a soft rot or decay, with a characteristic disagreeable odor. In its advance stages it reduces the entire rhizome to a putrid mass, entirely different from the natural decay of the older portions of the rhizome, which is sometimes hastened by wet weather.

Root rot is usually indicated first by the sudden falling of a fan of leaves, which, when taken hold of, comes away easily from the decaying rhizome. Heavy, wet soil, over watering, wet seasons, old crowded plants, and possibly the presence of borers, all tend to create conditions favorable to the development of the root rot.

Usually the rhizome can be saved if the rot is noticed in time. Entirely cut out back to sound tissue, and the wound thoroughly disinfected with potassium permanaganate—one level teaspoonful of the crystals to one quart of water. If the rot has not made much headway, it may be cut out without taking up the roots. Ordinarily, however, it is better to take them up and replant. Knives and other materials used, as well as the fingers, should be carefully sterilized in the permanganate solution after treating each root. Rhizomes which are fully exposed to the sun, and have good drainage, are seldom attacked by this disease; this is one of the reasons why it is better to replant before the clumps get too large.

## Iris Leaf Spot (*Heterosporium gracile*)

Usually develops after the flowering season, giving the plants a dingy and unnatural look, which is quite distinct from the natural drying of the foliage. *Trojana* and *mesopotamica* varieties are most prone to this disease.

If the diseased leaves are cut off and burned as soon as noticed, or the upper third or half of the foliage removed entirely if the disease is general, this will usually control it, as the new fall growth is likely to be normally healthy. Spraying with ammoniacal copper carbonate solution (which may be purchased from most seed stores) is also helpful in preventing the leaf spot from spreading to uninfected plants.

## Iris Rust (*Puccinia iridis*)

This is a typical "rust" which forms small blisters or pustules of a dull rust color; it appears only infrequently. Dykes, the great English authority, recommends spraying with liver of sulphur.

General sanitation in the iris garden—good drainage, frequent replanting to provide the free admission of direct sunshine and air to the plant, and the careful removal of trash and dead leaves in the autumn, and especially in early spring—is likely to forestall any serious trouble from either the insects or diseases above described.

—F. F. Rockwell, "The Home Garden Handbooks".

### **Mustard Seed Fungus**

One of the newer diseases of the bearded iris which many people know little about is the Mustard Seed Fungus.

This fungus is spreading into more gardens because nursery men and growers are careless in selling infected plants. Kindly neighbors are also guilty of passing along this pest, although no doubt many are innocent of the deed.

This fungus when active resembles a fine white fungus-like web attacking the plant under the soil surface. It is brought to our attention usually when it is in the spore setting stage. At this stage it looks like tiny tan and brown miniature puff balls no bigger than the size of a blackheaded pin. It adheres to the base of the fan and rhizome and scatters on the ground near the plant. Mustard seeds describes its appearance and it was probably named such because of its resemblance.

It is a good thing to look over each new rhizome. If a fine white web adheres to the rhizome it is best to soak the root in a fairly strong solution of Semesan for at least half an hour.

Garden tools must be kept clean and never used directly from infected areas into clean beds. This neglect is the best way to wipe out of your perennial borders many choice plants.

—Mrs. H. L. Medbery, AIS Bulletin, May 1937.

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## **THE AMERICAN IRIS SOCIETY**

Of the many thousands of iris enthusiasts who receive this booklet, about one thousand are members of the American Iris Society. A scant few of the others know of the organization and its purposes and advantages, while the overwhelming majority haven't the least idea of what it stands for. The designations H.M., A.M., and even the Dykes Medal are elaborate somethings that are construed to stand for high quality when placed after a catalog description of an iris, but Heaven only knows how they are arrived at! As a matter of fact, the great progress that has been made in iris breeding, and the immense popularity of

this flower, are both largely the result of the existence of the Society these past twenty years. Let us tell you about it.

A score of years ago the named varieties of iris in commerce were a pitiful lot indeed. For the most part at least colors were dull and uninteresting, branching was poor, shape was hardly a consideration and substance even less so. Most of the large sized varieties sprawled all over themselves. But a new day was just around the corner. In this country Mr. Farr of Pennsylvania, Miss Sturtevant of Massachusetts, Mr. Hall of Pennsylvania, and the Sass Brothers out in Nebraska, and a few others, were engaged in the exciting business of crossing the sorts then available, and newer and better things were in the offing. Lee Bonnewitz, of Van Wert, Ohio, and John Wister of Philadelphia had visited in France and England and brought back some most unusual developments in the way of seedlings of the famous Dominion. A call was sent out to prominent growers of iris in this country, many of them amateurs, and Mr. Wister was elected president of the organization then formed. Thus cemented together, the hybridizers, nurserymen, scientists, connoisseurs and just plain iris addicts have constantly advanced the popularity and perfection of the iris.

Cooperating with societies in France and England the work is now international in scope. Iris shows are sponsored in all parts of the country, accredited judges are appointed annually—men and women who know iris—a system of awards has been worked out whereby new introductions of merit compete with each other for the highest honor of all, the Dykes Medal. The Society publishes and sends to all members four valuable bulletins each year. These booklets treat of every phase of iris growing and breeding and are of inestimable value to anyone who is sincerely interested in this flower. They are informal in the extreme, containing numerous articles from the members themselves, telling of their experiences, their travels, their likes and dislikes, their successes and their failures. The bulletins also cover the scientific side of iris breeding and culture, with the subject handled by the most competent experts. Each year a list of all new iris registered is published together with data concerning parentage, description, and so on.

The high spot for all members is the annual meeting, held one year in one section of the country, the next year in a different geographical location. In this way the experts and judges are in a position to better evaluate the merits of new varieties, viewing them under altogether different climatic and soil conditions.

These annual meetings, or conventions—which might be a more apt term—bring together iris fanciers and admirers from all walks of life. Most of the leading commercial growers make it a point to attend, as do a great many of our best known

hybridizers. Owners of vast estates, professional gardeners, landscape architects, and Mr. and Mrs. Average Citizen who love flowers and particularly the iris, are counted among those always present. Since those in charge of arrangements invariably select a city known for its iris plantings, visitors are certain to see a lot that's new and interesting and in addition to enjoy the hospitality of local garden clubs and host iris folk. For those who are not fortunate enough to be in attendance, the bulletins give complete and lively accounts of all that goes on and detailed discussion of new varieties shown.

Every breeder or introducer covets the honor attached to an award of the American Iris Society. Scores and scores of men and women from coast to coast who are known to have a thorough knowledge of what constitutes a good iris are sent ballots and rating blanks prior to each flowering season. After the iris have finished blooming, the blanks having been filled out are mailed to a central chairman and the returns tabulated. The H. M.—Honorable Mention—is given to a restricted number of most outstanding sorts. The next highest award, Award of Merit, can go only to those varieties which have previously received an Honorable Mention, and here again the number is restricted. The greatest possible honor for any iris, the Dykes Medal, must go to a flower which has previously won an award and which has been in commerce sufficiently long to have proven its reliability under many conditions of weather, soil and climate. Runner-up for this award is a considerable honor in itself.

These few paragraphs have attempted to give you some idea of the Society and what it can do for you. If you care to join send a check for \$3 to B. Y. Morrison, Secretary, 821 Washington Loan and Trust Bldg., Washington, D. C. Treat yourself to a year's membership.

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## GROWING IRIS FROM SEED

Condensed from a booklet published by J. V. WADELL, Okaw Iris Gardens, Vandalia, Illinois, and reprinted through his courtesy.

No other flower has responded so fully to the hybridizer's efforts at improvement as the iris. From the old fashioned flags of Mother's day, limited to purples, muddy yellows and whites, there have been developed literally thousands of tall, beautifully formed and colored flowers covering a great range of color.

The bearded iris is truly a garden flower, its value to the florist is nil, but as a pageant of color glory in the garden, noth-

ing can equal it; it conforms to the limits and color range of the smallest as well as the largest garden and is practically the only "fool proof" garden plant.

Each season brings new and startling improvements in the shape, color and form of the iris and the average small garden grower is often confused by the myriad descriptions of these novelties as well as appalled at the high cost of these new productions, which is largely due to scarcity of stock. Fortunately there is a way whereby the true garden lover, whose instinct is to get down into the dirt and create some new thing, may acquire a share in some of the new beauties of the iris world without great expense, except in time and care devoted to raising some new plants from iris seeds.

The bearded iris, having a flower with large individual parts, is not readily pollenized by insects, so as to produce seeds naturally. Only in an exceptional year will one see many seed pods in an iris planting, which have set naturally. The individual parts being large also makes it possible to easily hand pollenize the flower, with almost 100% probability that no other cross will take place naturally and it is from this hand pollenizing that most of the new and better iris are produced.

Many famous hybridizers have been and are still making great strides in building up iris blooms toward some certain, definite change in shape, form and color of flower. The iris loving world owes a great debt of gratitude to this eminent list of hybridizers; the amateur, who is largely concerned with getting some new, novel and beautiful flowers for his garden at a minimum of expense, has the opportunity to add not only some beautiful and original blooms to his garden, but to enjoy an insight into Nature's mysteries in the production of hybrids and the thrill of producing a plant whose bloom is different from all other iris blooms.

Due to the greatly mixed ancestry of the iris family no seedling comes true to its parentage; in fact every seedling produced to a blooming stage is unique in that in some way it is different from any other iris plant that has ever bloomed. Not all seedlings are the equal of the parents; some are, and a very, very few may show some improvements. However, seed from properly mated parents will usually produce some very pleasing blooms, resembling the parents to some extent and if one really becomes interested in the "Hybridizing Hobby" some very interesting results may be secured by choosing the best of the seedlings and crossing or re-mating them for improvements.

The first bloom of an iris seedling fixes the form, color and type of flower for that particular rhizome; it will produce the

same bloom, always. The natural increase of the rhizomes (bulbs) furnishes new plants, which will produce flowers similar and identical with the bloom of the parent plant.

Pollenizing the iris blooms is done by hand, on bright sunny days, from 10 a.m. until 4 p.m. Rain, damp days and weather conditions affect the result—rain or excessive moisture on the flower parts nearly always ruining the set. As soon as the cross is made, a tag, with date and names of the parents is attached to the flower stalk, just below the bloom. In from 4 to 6 days, if the cross takes, the seed pod begins to swell, the bloom dries and falls and another iris pod is on the way. Many crosses are failures, for many reasons; a 50% get on the crosses made is a good average.

By July the pods begin to ripen, some large and some very small, some full of seed and some with only abortive efforts at seed forming. When ripe the pods turn brown, split open at the top and the amber colored seeds may be seen lying in the three compartments of the seed pod. Upon pressing the dry pods open, the seeds roll out and are kept in separate containers, properly tagged, showing the parentage, and kept in sun and air until properly dried. When cured, the seed has a hard, shriveled, quartz-like appearance, remaining so until germination starts.

Early planted seeds may germinate in the fall with a resultant loss from winter freezing; from September 15th to November 1st is a proper time for planting.

A seed bed should be prepared in some part of the garden which will be undisturbed. Plant in the open garden; freezing helps germination. For a small bed of from 50 to 200 seeds, make a wood frame 24 by 48 inches. Screen the dirt to remove sticks and stones, add some sand to make the soil friable and porous. Space your rows 3 to 4 inches apart; strike off a light furrow  $\frac{1}{2}$  to  $\frac{3}{4}$  inch in depth, drop in your seed two or three to the inch. Be sure to have some wood marker stakes, numbered or lettered to indicate the various crosses, as you plant them. Smooth and firm the dirt back over the seeds, lay a little brush over the box, dogs like to bury bones in them! Do not blanket the box, let the seeds freeze in the ground. In the spring watch the planting and early in April the little spears of green will begin to push up through the earth. Keep the bed clean of weeds. Not all the seeds will germinate; 50 to 60% of germination is good. If possible to leave the seed bed undisturbed, some seeds will germinate the second year.

When the plants are 3 to 4 inches high, with definite shape to the fan, get ready to transplant into permanent location. Have your rows for permanent location ready; have your record markers ready; wet the seed bed the night before transplanting. Slip a blunt table knife alongside a plant and lift it out, carefully, with enough dirt attached to protect the young rootlet. Set in place one at a time, a foot apart and in rows at least a foot apart. Keep the ground clean, moist, but not wet. Stir the ground every day for a mulch. Despite the fact that adult iris plants are usually hardy, the little seedlings are very tender until good root growth has been established. Occasionally firm the little plants down with the fingers to promote deeper root growth. If you can get them up to a foot in height they will carry on themselves, but keep the rows clean and cultivated.

Your largest plants will bloom the next spring and practically all will bloom the second year.

In the spring following the planting, watch your plants for buds and at dawn some morning in May or early June, go into your garden, alone, and watch the unfolding of a new flower, which you have produced, the like of which is not to be found elsewhere in the world, and if this does not generate a pleasurable thrill within you, then you are not of the Iris Clan and this little leaflet has been written in vain.

Everyone should have a hobby; it's good for the soul. Mine is raising iris. Try it; it's the best outdoor sport for a one-man or one-woman team yet devised!

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## MAKING THE IRIS CROSS

The enthusiast who contemplates "home-made" iris must, first of all, acquire a knowledge of the parts, or sex organs, of the iris flower. Nature has provided efficiently against cross pollenization in iris by placing the *anther*, which bears the *pollen*, in a curved groove directly below the *stigma*, which protrudes like a tiny shelf above it, and which must be fertilized on the upper surface. At first glance, the *beard* or *crest* of many irises looks as though it were the pollen-bearing part of the flower. But if the *fall*, or lower petal, be lightly pulled down, the actual *stamen* will be found tucked away neatly against the *style arm*, appearing, in fact, to be a part of it. If the *stamen* is followed down to its base, however, it will be found joined to the base or *haft* of the *fall*. As the iris flower is constructed in multiples of three, it has three sets of each of the parts mentioned.

**When to Pollenize.** Pollenizing is best done on a bright, dry day, about the middle of the morning when the flowers are well open and the dew has entirely disappeared. Those flowers which are to be used as the seed parents should be prepared by removing the stamens. This may be done quickly with a small pair of tweezers held in the right hand, while the fall is pulled gently downward with the left.

When the flowers first open, the stigma is stuck rather closely against the crest which rises above it, but when ready to receive the pollen, it expands, forming a tiny ledge, slightly gummy or sticky on the upper surface.

A stamen is removed from the desired pollen plant with the tweezers, held between the right forefinger and thumb, and rubbed across the stigma lip, which may be placed in the most convenient position to receive it by holding the crest between the left thumb and forefinger, the latter being placed low enough to bend the style slightly forward as the crest is pressed back, thus protruding the stigma lip. Stamens with fresh, moist pollen from newly opened flowers should be used for pollenating. If one cares to make sure that the work has been satisfactorily done, a small handglass will show the individual pollen grains adhering to the stigma surface.

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## **NOW, LET'S TALK ABOUT *IRIS PLANTS***

First of all, it is hardly necessary to explain that a certain named variety is the same whether it comes from Canada, Oregon, or Timbaktu, but the immediate quantity and quality of that plant and its future value to you is quite another thing, and it is this factor that has been responsible for the growth and favorable reputation of Cooley's Gardens these past fifteen years. Just how are one grower's plants different from those of anyone else? Listen—did you ever bite into a big, juicy New York cut of steer beef? Or did you ever struggle with an alleged steak that defied the combined efforts of both knife and teeth?

Plants grown by us are separated from the old clumps every year, planted in new ground, carefully prepared, constantly cultivated and hoed, checked for "rogues" at blooming time, and freshly dug and trimmed and carefully packed to ship to the customer.

Some growers never think of filling an order other than by going to the garden and cutting or gouging out a division from the old parent clump to get whatever happens to come out,



without regard to size, roots, or appearance; or, in some cases, possibility of bloom the first season.

The size and vigor of our rhizomes have tempted some eastern growers to send their stocks to the Pacific Northwest where they maintain extensive plantings and operate from the old stand at home to maintain a reputation for hardiness. One such grower has several acres *under irrigation* in the state of Washington. Now that is his privilege, but his buying public is innocently led into believing that their orders are being filled with "hardy, home-grown stock."

When you buy tulips or daffodils, do you insist that they be produced in your own locality? Of course you don't! You are more apt to require that the bulbs come from Holland, or Holland, Michigan, or the Pacific Northwest, all of which have a reputation for producing superior Dutch bulbs. Nothing succeeds like success. If you have never planted or grown iris from Cooley's Gardens, try an order this year. If you are dubious, make it a small one. We feel certain that you will be pleased when you open the package, and your enjoyment will be still greater when your plants come into flower next spring. If you are already in the iris game, interested in novelties, cast aside the accepted idea that new and scarce varieties must always need be small of rhizome. Order just one, and find out.

And remember, our iris rhizomes are not irrigated, not fertilized, and we have never had an iris borer.

Yours for a glorious garden,

*Cooley's Gardens*

SILVERTON, OREGON

Since this booklet has been received from the printer, the 1938 catalog of one of the eastern growers above referred to has come into our hands. In it he explains that his stock is now grown in the state of Washington, and that his orders will be filled with plants therefrom.

